

## C L A I M S

1.Method for determining wavelength dependent information in an optical signal transmission system (100), characterized in that the method comprises the steps of:

-launching a plurality of optical signals at different wavelengths into the transmission system (100),

-for each wavelength, receiving a backscattered and/or reflected portion of the launched optical signal versus time from the transmission system (100), and

-processing the received signal to determine wavelength dependent information about the transmission system (100).

2.The method of claim 1, characterized in that the processing step comprises:

-determining wavelength dependent information for at least one optical device along a link (1, 2) of the transmission system (100).

3.The method of claim 1, characterized in that the processing step comprises:

-determining a relative gain profile versus wavelength for at least one amplifier (9, 10, 11, 12) along a link (1, 2) of the transmission system (100).

4.The method of claim 1, characterized in that it comprises the further step of:

-displaying the wavelength dependent information.

5. System for determining wavelength dependent information in an optical signal transmission system (100), characterized in that the system (19) comprises:

-a transmitter for launching a plurality of optical signals at different wavelengths into the transmission system (100),

-a receiver (23) for receiving a backscattered and/or reflected portion of the launched optical signal versus time from the transmission system (100) for each launched wavelength, and

-a processing device (22) for processing the received data to determine wavelength dependent information about the transmission system (100).

6. The system of claim 5, characterized in that the transmitter comprises a pulse generator (20) and a variable wavelength light pulse source (21).

7. The system of claim 5, characterized in that the processing device (22) is adapted for determining wavelength dependent information for each optical device along a link (1, 2) of the transmission system (100).

8. The system of claim 5, characterized in that the processing device (22) is adapted for determining a relative gain profile versus wavelength for each amplifier (9, 10, 11, 12) along a link (1, 2) of the transmission system (100).

9. The system of claim 5, characterized in that it further comprises:

-a display device for displaying the wavelength dependent information.

10. Optical signal transmission system characterized in that it comprises a system according to claim 5.

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